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AUTHOR Kothari, Rajni
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ABSTRACT

Stressing the global dimension to the adversary relationship between economic development and environmental conservation, this monograph examines the philosophical, historical, cultural, and ethnic underpinnings of modern science and technology. In addition, the monograph spells out policy implications of an alternative concept of development and technology in which development, science, life-styles, and environment merge in a symbiotic relationship. The hypothesis is that industrialization has subverted its original purpose of liberating people and has resulted, instead, in a flow of resources away from poverty stricken non-industrialized countries into industrialized countries sporting increasingly wasteful life-styles. The document is one in a series of working papers intended to stimulate research, education, dialogue, and political action which will contribute to a more just world order. The philosophical premise of industrialization--that development would result in unending progress and abundance for all--has not been born out by abundant historical evidence that the economic gap dividing the rich from the poor countries is constantly increasing. Further, the fact that the wealthier nations are predominantly Western and the poorer nations are located in non-Western regions has contributed to a variety of economic, military, and international trade conflicts. The understanding that modern technology is rapidly destroying nature and leading mankind to scarcity once again has only recently begun to be realized. The conclusion is that the development/conservation dilemma as well as the inequality between developed and developing nations will be solved if nations are willing to think in terms of a world order which encourages equity and participation of people from all nations in economic and political processes. (DB)

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Environment and Alternative Development

Rajni Kothari

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WORLD ORDER MODELS PROJECT
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This paper is one in a series of working papers commissioned by the World Order Models Project in its effort to stimulate research, education, dialogue, and political action which will contribute to a movement for a just world order. The papers will deal with major global problems facing humanity, and particularly vexing contemporary political, economic, social, and cultural issues within an analytic and normative framework guided by the concepts and values of peace, economic well-being, social justice, and ecological stability. Special emphasis will be given to the necessity and feasibility of structural transformation of today's fragmented world in order to resolve these problems and achieve just world order results.

A Working Group of the World Order Models Project (WOMP) will use these papers in its new program aimed at publishing a statement in 1980 outlining the strategies for realizing just world order during this century. We invite interested individuals throughout the globe to respond to the various papers either directly to the individual authors or to WOMP. These communications will figure significantly in the WOMP Working Group's final statement. Where appropriate, the responses and critiques will be published in *Alternatives: A Journal of World Policy.*

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ENVIRONMENT AND ALTERNATIVE DEVELOPMENT*

Rajni KOTHARI†

This paper stresses the global dimension of the present-day human predicament, marked by the inequity of simultaneous material abundance and overdevelopment in some regions or sections and underdevelopment, increasing poverty and deprivation in some others. It seeks to examine the dynamics of a global structure that forces a continual flow of resources away from non-industrialized into industrialized countries, and from a steady and sustainable to an accelerating and rapacious use of resources in the service of a parasitic and wasteful life-style that is now spreading to the developing countries as well. The science-and-technology that sets this process in motion and sustains it, by making an incessant demand on fast-depleting natural resources, leads not only to the domination of man by machine but also to an increasing redundancy of man himself, besides blighting the life chances of future generations. Furthermore, this science-and-technology posits development and environment in an adversary relationship, and thus puts developmentalists and environmentalists in two hostile camps. The paper examines the philosophical, historical, cultural and ethnic underpinnings of modern science-and-technology, which has subverted its original purpose of liberating man, and points to the urgent need for rediscovering the other traditions that take an integrated and holistic view of life as a whole, in which science and technology and development and environment all merge in a symbiotic relationship. This entails the search for an alternative concept of both development and technology as well as of life-styles, so as to ensure diversity in consonance with local resource endowments (human, material and technical), foster self-reliance and autonomy, and promote equity and participation, not only in economic and political processes, but also in giving meaning and content to human dignity at various levels. In the end the paper spells out the policy implications of such an approach.

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*A slightly revised version of the keynote paper written for the regional seminar on 'Alternative Patterns of Development and Life-styles in Asia and the Pacific', held by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the United Nations Environment Programme (UNEP) at Bangkok from 14 August to 18 August, 1979.

†*Centre for the Study of Developing Societies, Delhi.*

I. The perspective

The concern with the environment in its renewed and somewhat urgent form is now more than a decade old. A major international conference under UN auspices, followed by the setting up of UNEP (United Nations Environment Programme) and the propagation of the concept of eco-development; a sustained programme in public education directed by the office of the Executive Director of UNEP, the Dag Hammerskjold Foundation and other prestigious bodies; a large number of expert meetings, inter-governmental consultations and UN General Assembly resolutions; provocative and highly publicized reports from the Club of Rome; the Cocoyoc Declaration, and reports of a series of international and national seminars, workshops, training programmes and research projects; as well as a large output of books and journals specially devoted to this cause – all have sought to infuse the environmental dimension into the thinking on international and national strategies of development. Yet another major effort is now under way to build the environmental concern into the basic thinking on development strategies and policies. The current spate of discussions on a new international development strategy for the 1980s seems to have provided a fresh impetus to this effort. Yet, for all that, environmental consciousness has not been aroused enough to put the question beyond the realm of controversy.

There must be some reason why this all-important matter that has such a vital bearing on the prospects of development, the well-being of future generations, and the quality of human life on this planet has to be still argued and 'sold' in an almost defensive manner. There is still a great deal of suspicion, especially in the Third World, of the motivations behind such an educational drive. And there are still many influential circles in the industrialized countries themselves which regard the arguments for ecological balance and environmental preservation as well-meaning but ill-informed and unduly pessimistic. Surely, there is something wrong somewhere. If the case for preservation and sustenance of the environment is so obvious, why this constant need for its repeated justification; why this unnecessary defensiveness?

This issue is being deliberately posed at the beginning of this paper. It is necessary to face up to it if the case for human environment is to make a breakthrough, and if its concerns are to inform the thinking and action in various parts of the world. The reason for the present state of affairs may be found in the very manner in which important issues are posed in international forums. This manner is characteristic of all knowledge that is generated and disseminated in the modern world, viz. in fragments and highly specialized capsules. Modern science, modern technology and modern communications

are all subject to this fragmented approach to human problems. The dialogue on development itself is no exception; it is held in a fragmented universe of discourse. (We shall show later that this itself is part of the basic predicament facing mankind.)

Not until the view of development as a linear aggregation of a series of specialized inputs gives place to a comprehensive and holistic perspective will the case for environment be fully established. Not until the UN system and other international – as well as regional and national – agencies cease to operate in isolated and watertight compartments will the environmental concern be seen for what it really is. It is not one more variable, or dimension, or even perspective, but rather a new comprehension of the human problematique, which entails the evolving of an alternative paradigm of scientific endeavour and an alternative design for development. The point at issue is not one of convincing policy-makers of the need to build the environmental concern into development policies; it is not even one of perceiving the intimate interrelationship between environment and development. It is something far more fundamental; it involves a clear admission of the faulty and inappropriate, wasteful and irrational, inequitous and exploitative, and, in the end, highly dangerous and possibly suicidal nature of the present model of development. It calls for nothing short of evolving a new concept of development to replace the one now commonly accepted. Indeed, the current conceptions of progress and human well-being and the definition of human needs underlying the present development model, the role assigned to science and technology in it, and the relationship between knowledge and human arrangements assumed in it – all are at fault and need to be redesigned.

Later in this paper we shall lay out in some detail the profile of an alternative design for development (which should by definition be 'environmentally sound', just as it should be economically and socially more just and politically more participatory and democratic). But we must first provide a diagnosis of the reasons why the present model of development, which once held out a great promise and gave rise to the vision of 'continuous progress for all', has come to grief. We shall provide such a diagnosis in the context of a fast-changing process of history, the philosophical underpinnings of 'development' and the consequences for the politics of development.

II. A historical overview

We may begin with some of the fundamentals. One is that we live in a period of profound transformation. It is engulfing and interlocking diverse regions, cultures and ecosystems into a common enterprise, giving rise, in the process,

to new conflicts waged on a scale unheard of in earlier times. Most of the thinkers and philosophers from time immemorial, who have tried to define the human predicament by reference to the need to overcome conflicts through some kind of a social order, have thought in terms of conflicts within a single society or, at most, of conflicts between two or more societies. For the first time in recent years we are realizing that this predicament is now world-wide. All actors in it, and, perhaps most of all, the weakest and the most deprived among them need to think in terms that cover all men and all societies. The end of colonialism, the unprecedented increase in population, the urgency of the economic problem, the sudden sense of the bounties of nature drying up, and the feeling of scarcity of basic resources in place of the feeling of continuing abundance for all – all these point, on the one hand, to a scenario of growing conflict that will become world-wide in scope and, on the other hand, to the need to work out new solutions based on a new structure of human cooperation.

A. Change in scales

This change in the scale of the human problem stems from both negative and positive developments. The negative factors are on the whole obvious: the spurt in both external and internal violence, the threat of a different kind of war, the enormous economic gap dividing the rich from the poor countries, the all-encompassing structure of dominance and dependence in which formally independent and theoretically equal states are tied almost inextricably in an unequal relationship, and, above all, a large increase in inequality in the world as a result of modern technology to which only the strong have access and which has led to a cornering of world resources by those who are already rolling in plenty, to the detriment of those who are most in need (even though a large part of these resources are located in the poorer continents). All these factors converge into a common pattern of violence, dominance and exploitation that has become global in scope.

But there are also positive factors that have contributed to thinking in global terms. We have come a long way from the days when men lived in small tribal enclaves, inward-drawn and fearful of outsiders, when human communities numbered no more than a few hundred each. The modern man's 'mastery' over the rest of nature and the conquest of territory, through which the modern state was consolidated, have enabled him gradually to overcome local strife and constant violence to which he was once prone. Over the centuries man has overcome parochial conflicts and local wars, which were the order of the day until not long ago; and today stable conditions prevail in many parts of the world, and wider loyalties and peaceful behaviour

are possible. Equally important has been the economic aspect of this process. Through the creation of economic surplus and its continuous multiplication and embodiment in capital and industry, it became possible to overcome the condition of scarcity and contain the conflicts caused by that condition. Imperialism enormously accelerated the process of economic expansion, by providing to the home countries not only vast spaces of the colonized lands but also cheap and abundant raw materials as well as ready markets, and thus pushed the slow-moving 'Industrial Revolution' into the age of affluence. Economic and political expansion together laid the foundations of the modern world as we know it.

B. Changing nature of human conflict

Now, the very conditions that enabled modern man – mainly Western man – to overcome the mean and brutal life he was earlier used to, and to enter an age of surplus to which his energies were diverted, have produced a new situation for the world as a whole. The very successes of the Industrial Revolution and the age of imperialism, which enabled human beings to overcome primitive forms of conflict and local rivalries (in not just the Western but also in the non-Western regions), have given rise to new forms of conflict on a much wider canvas, so that today we face a totally new kind of crisis. The major conflicts that engulf us today are not between neighbouring tribes, settlers and migrants, or plainsmen and hill people, nor between caste, language or religious groups, nor between rival regions within the nation-state. These conflicts are still there, but they are likely to diminish in importance with the passage of time. The real conflicts are now global in scope. These may be economic, military and strategic in nature, with the different regions and nations confronting each other over control and distribution of world resources, over patterns of international trade and control of technology, and over regulations governing the environment, the ocean beds and nuclear energy.

Underlying all these are the growing magnitudes of poverty, population, malnutrition and unemployment that affect large sections of the human race. Whether one takes one or all of these dimensions of conflict, each one and all have become global in scope and have given rise to deep cleavages and crises. It is only by thinking in terms of a world order, which can deal with this new situation in human affairs, that man will have to find his salvation. It calls for quite new ways of attending to human problems. It is not impossible to find these once the problems become clear and we are able to move out of the old grooves in which we habitually think.

It is necessary to grasp this point. For it is only in times of deep crises

that major changes become possible – for better or for worse, because man is capable of both. This is the time when we can either seize the opportunity, by deciding to control our future and usher in a new era, or miss it and be pushed into a downward course by forces beyond our control – after which it may be difficult to retrieve the lost ground. That we are caught in such a moment of crisis should be clear to anyone who reflects on the concrete realities of the world we live in and on the developments taking place in different parts of the world – developments in economics, in politics, in the availability and distribution of resources, in the relationship between food and population, in patterns of trade and control of technology, and in the strategic and power relations between different nations and regions.

C. Changing perceptions of human crisis

While it is generally recognized that the contemporary human condition is one of deepening crisis, the perception of the nature of the crisis and its causes has changed over the last two decades. Until recently – and this view still persists – the crisis was perceived in terms of an ideological struggle between different ways of life and systems of belief, not infrequently associated with a struggle for power between rival blocs of countries. A very large part of human energy and world resources was devoted to this conflict. (The conflict is by no means over yet, which in no small way accounts for the continuing terrible arms race.) Later, after the mid-sixties and the gradual attenuation of the cold war, attention came to be focused on something more immediate and very pressing – something, too, that had somehow evaded human sensitivity for so long – namely, the great economic schism dividing the world into extremes of affluence and deprivation, with concentrations of poverty and scarcity and unemployment and deprivation in one vast section of mankind and of over-abundance and over-production and over-consumption in another and much smaller section of the same species. Both are tied together in a relationship in which resources from the poorer regions have for long been drained out and continue to be drained out through new instruments of appropriation. The last few years have witnessed an increasing concern with this single problem of *inequity* on a global scale, though it must be admitted that very little has been done systematically to solve it.

The two perceptions of the nature of the human crisis are existing side by side – evidence for which can be found in the mounting piles of ever more deadly armaments, on the one hand, and the growing hordes of the very poor and the undernourished living in conditions of extreme deprivation including starvation, on the other. One must therefore go beyond single

dimensions and look for more fundamental causes. After all, the fact that a century of unprecedented material progress has also been one of sprawling misery and increasing deprivation, the fact that an age that has witnessed the end of empires and the dawn of independence for so many nations has also turned out to be an age of increasing domination of the world by just a few powers, the fact that while world agricultural production has been ahead of population growth, food availability has become a serious problem for millions of people, the fact that there is a net flow of nutritional resources from the under-nourished to the over-nourished regions of the world, the fact that 'aid' and transfer of technology and resources from the industrialized to the non-industrialized regions has turned out to be a net drainage of surpluses from the non-industrialized to industrialized regions – all these and much other similar evidence from contemporary life suggest that there is something basically wrong with our world and the global structures that have permeated it. Indeed, there is something basically wrong with the way modern man has gone about constructing his world.

Industrialization was expected to end the condition of scarcity for mankind as a whole; in fact, it has made even moderately decent existence more scarce and inaccessible for an increasing number of human beings. Modern education was expected to lead to continuous progress and enlightenment for all and, with it, greater equality; in fact, it has produced a world dominated by experts and bureaucrats and technocrats in which the ordinary human being feels increasingly powerless and a victim of manipulation by forces beyond his control. Similarly, modern communication and fast-moving transportation were expected to produce a 'small world' in which the fruits of knowledge and development in any part of the world would be available to all others; in fact, they have produced a world in which a few metropolitan centres are sucking a large part of the world resources and depriving other regions of whatever comforts and skills and local resources they once enjoyed. Surely, then, there is something more deeply wrong with the structure of this world than is epitomized in the production of nuclear weapons or the economic distress of the poorer countries. The world we live in is indeed very badly divided, but the divisions are more fundamental than are manifested in ideological, military or economic rivalry. Perhaps there is something fundamentally wrong with the model of life that man has created in the last hundred years or so.

D. Role of knowledge

Crucial to this particular model of life, which has produced a world of such sharp divisions and enormous inequality and exploitation, is the role of

knowledge in human affairs. Never before had the product of the human mind acquired so dominant a role as in modern times. It has changed the world beyond recognition – according to some, perhaps produced one beyond redemption. Its basic contribution has been to give man a tremendous sense of power and manipulation. Nothing else could have made man so arrogant as this particular role of knowledge.

Now, it would be quite an obscurantist position to take if one were to say that knowledge by itself has brought mankind to grief. Modern science has, if anything, been a great liberator of man both from the travails imposed by nature and from the excesses of religious doctrine. But something happened to the progress of science which undermined its original promises. Because it flourished in a culture (viz. of the West) that looked upon it as an instrument of power and domination rather than as a liberator of the human spirit as such – which is how knowledge was looked upon by the ancient Chinese or the Indians, or the ancient Greeks – science soon became an instrument of technology, which, again, not content with overcoming hardships and fulfilling basic needs, went on a rampage for continuing domination, exploitation, competition and perpetual tension, both between man and man and between man and the rest of existence. In course of time, it also became an instrument of monopoly and growing inequality in which the fruits of technology diffused widely within some societies only at the expense of a great many other societies – the societies which incidentally provided the basic raw material for prosperity.

In sum, largely because modern technology was located and flourished in a particular culture – a culture which was basically aggressive and in which there was not enough of moderation and self-control – it has become a Frankenstein. This has begun to be realized only of late. And it has been realized, not because of the inequities to which modern technology has given rise (the problem of poverty emanating from a pursuit of plenty was not taken note of until very recently), but rather because of the exploding of the myth it had fostered: the myth of unending progress and abundance for all. Today, suddenly, the affluent world itself faces the spectre of scarcity once again. It is at the same time beginning to see the excesses of modern technology, shown by its concern over the environmental crisis. The environmental crisis, however, is only a symptom of a very basic change in relationships – from man's reliance on nature to man's dependence on machinery. This has entailed an increasingly aggressive attitude of man to nature. He denudes it at a rate much faster than its capacity for renewal and regeneration, thanks to the ever-growing demand for energy. But this has also entailed a growing exploitation of human beings. The domination of man by the machine–and his dependence on it for his sustenance– means not just the constant and continuous need for energy and raw materials, it also entails less and less

need for human beings. Hence there are in this world millions of what are known as 'marginal' men and women, people for whom society has no use. The upshot is that man himself has become superfluous and obsolescent; he is being looked upon as a burden not only on nature but also on society. Paradoxically, thus, the system that modern man has produced is one in which the most dispensable element is man himself.

The crisis that faces modern man is a crisis wrought by science and technology's taking a particular direction in the age of positivism, and under its impact. The full consequences of such a course are fully visible in our own times' in the shape of all the particular crises to which men of science and philosophy have drawn our attention: the threat of total war, the threat of extreme deprivation co-existing with overabundance, the threat of the collapse of the biosphere. As we realize this, we must also realize that nothing short of a fundamental rethinking about the human enterprise will rescue man from these crises. This rethinking must encompass the world as a whole. For what we face here is an extreme dualism of the world, a world so divided that its survival itself is at stake. Even if a nuclear war is avoided – and even that could not be ruled out if the divisions facing mankind became sharper and deeper – it is not certain that such a badly divided species can survive the increasing state of tension and violence that it will have to face. Many other species under such conditions have perished, even without having had the instruments of mutual destruction that humans have.

E. Colonizing the future

So far we have been concerned with the growing division between the different regions of the world, resulting from the convergence of many factors, and producing conditions of increasing deprivation and exploitation in major regions of the world, despite their formal independence, despite their large populations and great potentiality, and despite their considerable resource endowment and rich cultural heritage. There are other divisions, potentially no less troublesome, to which thinkers are only now beginning to pay grudging attention. The most important of these is the division between generations. By this I do not mean merely what is usually known as the generational conflict between the old and the young – which is, of course, important and quite serious and which has not received systematic attention despite a great deal of talk about it. What I have in mind is something more comprehensive, namely, the division between the present and the future, the future including both the very young among us and the yet-unborn generations. Rational anticipation of the future and prudence in preparing for it were inherent in all earlier thought. But never before was this concern

with the future of such immediate relevance and urgency as it is today, if only because the future consequences of what is done in the present were never as irreversible as they are today, as the growing economic, energy and environmental crises are now making unmistakably clear. The most serious thing is that the brunt of the consequences of our decisions are to be borne by beings who have no voice in the making of today's decisions. The consequences of what our parents and the older generation among us did – the ravaging of nature, the depletion of resources, the pattern of investment, the stockpiling of armaments, the building of highly centralized economic and political structures that are difficult to change except by long struggle and violence – are being felt by the younger generation of today. And what the middle and the younger generations of today do will shape the destinies of the unborn generations of tomorrow. How is one to ensure that the interests of the younger generation and the yet-to-be-born generations are somehow represented in the present?

It has been an assumption of planning, and of prudence generally, that one must sacrifice or postpone gratification in the present so that the future generations can live a better life. In practice, however, modern man has been doing just the opposite. He has been so involved in his own gratification in the present (towards which modern technology with the help of its progeny, the mass media and advertisement agencies, have been pushing him) that he is actually sacrificing the life chances of future generations – which will consist of several billions of people.

Thus, just as decisions taken in the metropolitan centres of the world are adversely affecting millions of people in far-off places, so also decisions taken by the old are affecting, and will continue to affect, the future of the young and the yet-unborn generations. These are serious problems to which the present political and economic models provide no answer. What is needed is a different kind of consciousness that takes a total view of existence, including the existence to be. Such a consciousness will naturally empathize with the weak, the distant, the inarticulate and the unborn. This consciousness should be able to intervene in legislative and administrative processes at various levels of the world. This is not to suggest some kind of Brahminic or mandarin class or clerisy that arrogates to itself all knowledge and all wisdom and the exclusive right to legislate for all. Such a consciousness does no doubt exist here and there, but in a nebulous form, and, at any rate, it is not very influential in decision-making processes of representative institutions and governmental structures. But the need for someone to 'represent' the future in the decisions made in the present cannot be overemphasized. Or else alienation and schism between the generations are bound to take place.

F. Colonizing nature

Beyond the extension of empathy and identity across regions and over the horizon of time, there are still other issues of ethical relevance. Man-in-technology has not only been destroying nature and the life chances of his less fortunately placed fellow beings and the young and unborn generations; he has not only created a massive system of dominance, exploitation, inequity and repression through which the human species is divided into opposing camps. All this is still in the area of what man has done to man. But beyond this is also the question of what man has done to other species and forms of life as well as to inanimate nature, with all of which he is, in fact, united through a common organic bond, and without whose health and abundance his own survival will be at stake. Increasingly man is destroying, almost without restraints, various other species, vegetation, gaseous and chemical sources of life and the sea-beds and rocky lands whose bounty has been the cause of so much imagination and sense of wonder and joy and creativity. Springing from the unending acquisitiveness of technological man and the decline in his sensitivity to his own kind in other regions, to future generations and to other forms of life, he has been on the rampage, which threatens both the survival of other species and forms of life and, in the end, his own nexus with the rest of creation.

G. Need for a new paradigm

The present-day human predicament includes all these issues – the rampage of technology, the severe dualism of the human species, the sacrifice of life chances of future generations, and the destruction of other species and other sources of life and sustenance. Therefore, the salvation that today's man has to work out for himself, and for the whole of nature along with his own, must address itself to all these issues together, for the crisis that he faces is total as it was never before.

Man has shown an almost infinite capacity, in the course of his history, for identifying his own immediate purpose with larger purposes. If, in the primeval stage, he identified himself with his own kin and cared little for others, today he has come a long way, and is able to identify himself with millions and hundreds of millions that constitute his own collectivity (nation, region etc.). He should be able to go further and identify himself with the whole of human species – and, indeed, even beyond the human species. His capacity to symbolize and identify with abstract entities enables him to think, not just for himself, his community, his nation, or even his species, but for the whole of creation – if only he uses his capacities for the right ends.

Now this is not something entirely new. In an earlier age, before man began to use science and technology to bolster his arrogant and exclusive sense of his destiny, he had, in some respects, shown a striking empathy for, and the capacity for identifying with, the whole of creation. (This was at least true of the Orient, but to some extent also of Christendom.) The intellectual and religious movements that fostered a deep regard for all forms of life, and an abhorrence of violence of all kind, including violence to other forms of life (in some societies taking the form of what is now called vegetarianism), had their mainsprings in this innate power of man to symbolize, and identify with, creation and life as such and to revolt against his own excesses. This is what powerful movements like Buddhism and Jainism represented in my own land. Similar movements took place in other regions. It is true that often, as in India, this feeling for life produced a rather quiescent attitude to life's purpose, and even a metaphysic that undermined man's confidence in himself by ascribing more reality to nature than to man. It is necessary to guard against this kind of defeatist religiosity (which one notices today also among the 'anti-materialist' generation in the West). But such an attitude is by no means inherent in developing a larger identity with life and nature and creation.

Man does have these capacities. Indeed, of all the species only he has them, for only he is the abstracting animal, the historical animal, the animal that, through language and memory, can integrate sense perceptions with intricate systems of knowledge and awareness and morality. But in the present-day predicament he needs to move beyond all the structures he has created – territorial, socio-economic, technological, and consumption patterns – and evolve new criteria for human effort and co-operation.

The present structures may have, at a certain stage, enabled him to overcome strife at lower thresholds of collective being, but they have now become at once an encumbrance and a menace. It is not that man must give up all his achievement in the way of acquired knowledge and institutional structures and start on a clean, new slate. (This is not the way evolution works.) It is rather that our view of the values and purposes that should inform our activities and knowledge and institutional structures must be consciously reviewed, and choices made wherever they are called for. Man has the capacity to make such choices. Today he faces a historic challenge which he can use to put his house in order. It is best to snatch an opportunity when it comes in the form of a challenge; for it may not come in the same form again. Maybe some small technological 'breakthrough' in one field or another will lull him again into quiescence. But we now know that all such breakthroughs – such as steel and iron, or electricity and oil or still new forms of energy that are being desperately explored right now – are temporary and cannot take the place of fundamental restructuring of social forms in

keeping with the basic needs of the human personality. Gadgets may temporarily overpower the mind. but ultimately the mind must come into its own and address itself to the challenge of life.

The point to remember is that every few hundred years a new situation presents itself, and each time it calls for a new understanding and a new paradigm of action. We are living in one such moment in the history of man and the universe. It has been a characteristic of all such situations that they arise out of a sharp division in the human community threatening its stability and survival. And it was the task of all major intellectual efforts stirred by such situations to seek to overcome the division and restore basic unity among men.

Today, human community again finds itself in such a situation. Only, today's divisions are sharper and more numerous than they ever were in the past: the grim division between dominant and dependent nations, intermeshed with the division between urbanized metropoles and rural peripheries and with the division between the rich and the poor; the division between contending ideologies, lately become very subtle and sophisticated; the division between races that has yet to see its real gravity and violence; and, above all, the division between an increasingly dehumanizing human being and an increasingly de-naturalized nature, thanks to our overemphasis on technology. In sum, it is a division between man and man, between man and other beings, between machine and life, between the grand creations of human reason and will (artifice) and the incessant demands of the biosphere and the environment (nature), and, through all this and in the most primitive sense, between the beastly and the benign, the selfish and the social parts of each being, and between a dual pursuit of knowledge and science – one that leads to humility and self-control and the other that leads to uncontrolled power and arrogance.

The choices before this badly divided and increasingly violent world of ours are many. They relate to the world political order, the techno-economic system in its twin aspects of the opportunities it offers and the kind of relationship it forges with nature, the development strategy, and the intellectual effort needed to cope with the situation. We can choose, if we will, to move from the present structure of dominance, inequity, loss of autonomy and dignity for millions of human beings to a more just and humane world in which both human collectivities and individual human beings are able to work out their respective destinies in a framework of integrity, balance and harmony.

III. Philosophical underpinnings

Behind these myriad divisions that seem to permeate modern civilization lies a dominant philosophical doctrine that has had its greatest triumph in our own time with practically the whole world accepting it. It is necessary to come to grips with it; for, underlying the irrational sway of modern technology, is this philosophical doctrine, which, emanating from a particular culture, has brought the whole world under its sweep.

The doctrine of modernity

This is the doctrine of modernity. The power of the doctrine lies in its simplicity. The end of life is narrowly defined so as to seem to be within the grasp of all – progress based on economic prosperity. It is to be achieved by the application of inanimate power to the fulfilment of human needs. There is no mystery about it; it is all very 'scientific'. Indeed, there are no mysteries in life itself, since most of them have been uncovered by science, and the little that remains will soon be uncovered. All that men and societies have to do is to discard tradition and superstition and become rational and 'modern'. And all they need to learn are the essential *techniques* by which happiness could be had by one and all. For a whole generation after the collapse of colonial power, this doctrine held sway over the minds of men and so dazzled national elites that they practically surrendered their hard-won freedom at the altar of the new religion called modernity.

Today that doctrine is in a shambles. Not only has the 'developing' world discovered that all the enormous noise and fury of development projects (and the surrender of national and cultural autonomy in the process) has led them into a blind alley; the 'developed' world, too, has discovered that the path of its own progress is not limitless and that it is highly vulnerable to pressures emanating from the Third World. Like many of its other acquisitions, progress is a zero-sum game. And it is a game that others can play as well. Hence the sudden splurge of talk about 'interdependence', of the need for cooperation instead of confrontation. Hence the show of great concern for the poor and the underprivileged of the world. Hence the growing criticism of the growth-oriented and centralized model of development, questioning not merely strategies but also the goals of development. Hence the growing stress on alternative paths to the future in place of a uniform course for all.

With such questioning and doubt, however, more fundamental questions have emerged. Is it just the limits imposed by conditions of scarcity that has made the paradigm of modernity unrealizable? Or is it, rather, that there is

something fundamentally at fault with the paradigm itself? Isn't the theory of progress, as developed in the West, based on an anthropocentric view of nature and a positivist conception of knowledge and science, which are responsible for a model of development spelling domination and exploitation? And if these be the essence of the Occidental culture, and its contribution to human thought and values, shouldn't we be discarding the whole of it, or most of it, and looking for alternative modes of thought and values embedded in some other cultures?

We live in an unstable world. It is unstable not only because the period of Western domination is fast coming to an end and there is taking place a wide diffusion of political and economic power, the full implications of which are not yet clear. It is also, and more fundamentally, because the philosophical moorings of that period have proved shaky. Men of thought everywhere are engaged in a deep search for new systems of meaning and values, new approaches to power and authority, new conceptions of human identity and cohesion and new bases of containing sources of conflict and ensuring human survival.

Search for alternatives

Increasingly, such a quest for alternative systems of thought and being is making intellectuals turn to non-Western cultures known for long-standing humanist traditions and for integrated perspectives on the human condition. What is the role of the Third World in such a quest? Here the picture is not too heartening. Barring a few isolated individuals and small centres of creative work, thinking in the Third World is bereft of systematic inquiry into the fundamentals of life. This needs to be quickly corrected. It would be a real tragedy if cultures strong in speculative thought and deductive logic were to fall prey to the lure of positivist science, imported from the West at a time when the world was in fact crying out for new world-views and meaning and value systems. The religions and civilizations of India, of the Islamic world, of the Sinic culture zone and of Buddhism provide major streams of thought that could substantially contribute to the present search for alternatives. But, as yet, there seems to be little stirring among the intellectuals of these regions along these lines. The fact that these regions also happen to be new centres of political and economic power is no guarantee that they will provide intellectual leadership. The intellectuals themselves have to strive to impress upon the elites of these societies the need for radical reorientation of the goals and strategies of development.

Such striving should be informed by two interrelated points. First, that modernity is not something that can be wished away. Both as a doctrine of

life and a guide to prudence, and as a framework for attending to the affairs of society, it has shaped our world in a fundamental manner, so fundamental, indeed, that we so often call it the 'modern world'. Modernity is not just Western or Occidental; it is part of us all. Indeed, the West itself is part of us all. It is more than a mere geographical category. It has become the dominant tendency and a major tradition for the contemporary world.

Secondly, that it is incumbent upon us all–in the West and in other non-Western regions–to relate this presently dominant tradition to other civilizational traditions and meaning systems, and to evolve a process of critical interaction between them. This inquiry is taking place at the right time. It is a time when what seemed a closed debate on a wide range of questions is being reopened, whether it is in respect of science and the philosophy of science, in respect of more basic relationships in society at the micro level, or in respect of family, ethnicity, sex roles and generational differences. On all these themes the discussion displays a deep skepticism about earlier formulations and an earnest new search. The wide-ranging controversy, however, often results in considerable confusion. So it is only right that we provide ourselves with a wide and all-embracing framework for the discussions in various spheres–a framework that weaves together the concerns of science, philosophy, culture and religion from alternative civilizational perspectives.

Science and technology

There have been, in human history, diverse visions and perspectives on the role of knowledge in society and its relationship with values and life-styles. What concerns us at the present juncture is the impact of a particular vision that came out of the peculiar European experience following the Renaissance and was organized in a particular direction after the seventeenth century, specially after the advent of the Industrial Revolution. What is peculiar about this vision is that the spur to it came from technology; in course of time there emerged what is known as science-based technology or, more correctly, a technology-directed science. In the beginning, science and technology flowed in independent streams – one close to natural philosophy and the other to practical craftsmanship. Gradually, as technological breakthroughs began to tantalize everyone, a myth was created that science and technology were parts of the same enterprise, 'modern' and 'rational', which promised perpetual 'progress' for mankind. Thus took place what may be called an unholy marriage between two traditions. Why did this happen? Why did science take on an increasingly technological character? Why did it begin to be judged more by its use-value than by its truth-value?

The cultural context

The answer is to be found in the cultural location from which both modern science and modern technology emerged. It was a culture that treated knowledge as an instrument of power, as an instrument of domination over sinister and unpredictable forces of nature, and, later, over social forces and institutions, and, ultimately, over relations between societies and between cultures and races. It is only by reference to the particular cultural context that this peculiar scientific world-view needs to be understood and can be understood.

So it is not so much the running amuck of modern technology as a historical process of a fundamental kind which has led to the domination of one particular culture over all others. It has been brought about through the mechanism of science, and through the view that this particular science was 'universal' and hence at once valid and beneficial for all. It is essential to come to grips with this particular world-view, of which science and technology are but means, that stands for steamrolling almost the entire world into a uniformity, reducing its rich diversity to a predictable and predetermined state. As we come to grips with it, we may be better able to seek to alter the course of modernity - not necessarily rejecting everything, but rather changing the internal relationships that govern the field of knowledge as well as the interrelationship between knowledge and society. And as we do this, we may be able to rediscover traditions of science and the pursuit of knowledge that are at the moment submerged. And, similarly, we may rediscover technological traditions from other parts of the world.

Other traditions

These other traditions of science have had long centuries of history and development and are still available to draw on. In the countries of Asia there are very strong traditions of science, as well as of technology, which at the moment are submerged under the dazzling impact of modern science, but which are gradually becoming highly relevant. China, India, Arabia, Persia, Indonesia - in all these major cultural regions there were important traditions of science and technology. What is common to all of them is the view of science as basically a search for truth, as a means of self-realization and self-control, not as a means of bringing anything, least of all nature, under domination. Similarly, there are traditions of technology. A great deal of work has been going on in the last few years to discover these traditions, which, because of their tenacity and continued utility, have survived in the folklore and in the folk practices of our peoples. There is need to rediscover these in a spirit of intellectual inquiry.

Towards a holistic perspective

One other characteristic of these traditions of science, as compared to the latter-day Western traditions of science, is the view that knowledge and the pursuit of truth are a holistic enterprise, not a specialized activity. It does not view science as a discreet activity and culture as another discreet activity, with further fragmentation and specialization under each. It rather thinks of science and culture and various activities under each as facets of the same phenomenon. It is this very all-inclusive view of creativity, thought, science, culture, philosophy, art, technology, economics and politics that intellectuals are seeking today in this world of extreme division of labour and in conditions of alienation and neurosis. The act of creation and the pursuit of truth are inseparable. The modernists have introduced a dichotomy between science and technology, on the one hand, and philosophy and art, on the other, which is most unfortunate. There is need to restore the comprehensive and holistic perspective that was there and still survives in many cultures, although at the moment it lies submerged.

Today the Western world is uneasy with its own traditions, some people looking for some magic answers from the East. It is a very opportune time for us to reinvestigate and re-establish these traditions and to relocate the place of knowledge and action in them. In saying this, it is important to have a modest view of what man can do, and a modest view of rational knowledge. One of the biggest maladies that the modern age has brought in its wake is the putting of knowledge on a pedestal. Never before had men of knowledge (which in the modern age means men of science and technology) acquired such a command over resources and such a power for making decisions affecting other cultures and civilizations far removed from the places where decisions are made, as well as other species and, indeed, the whole of creation – all in the name of knowledge. It is necessary to return to the tradition of knowledge that conceives it as part of a larger process of self-realization, a larger process of realizing certain values.

In the West, too, this search is on – perhaps more there than here. There is evidence that at a time when leading intellectuals and scientists in the West are raising the banner of revolt against the dominant perspective, the elites in the Third World are becoming extremely enthusiastic followers of it, succumbing to the mythology of modernity and becoming keen purchasers of the commodities called 'technology' and 'science'. An organized effort on the part of the custodians of social conscience all over the world is called for to persuade the decision-makers to move away from the suicidal path they are taking.

IV. The politics of development

In this effort, particular attention should be drawn to the political repercussions of the Western path of development. This kind of development has not only produced a more and more wasteful civilization; it has also given rise to an increasingly inequitous and conflict-ridden global structure of political and economic power. It has led to a bottling up of world resources – the bulk of which comes from the Third World – in heavy concentrations of capital and machinery located in a few centres that bear no relation to the real needs of human beings in various parts of the world. It has given rise to a techno-economic process that has rendered millions of human beings – including those in the industrial centres – obsolescent and redundant, and has greatly eroded resources and opportunities that could have sustained productiveness in countless human settlements.

Permeation

The prevailing model of development has had two fearful consequences. One is that it has ushered in wasteful ways of human consumption, not only in the rich, highly industrialized, 'developed' North, but also in the poor, non-industrialized, 'underdeveloped' South. The second is that the pattern of domination of the North over the South has permeated the nations of the South. This is to be seen in the domination of large masses of the people by small privileged elites, urban-based, westernized and more closely tied to the world metropolitan centres and to the experts and financiers of multinational corporations and lending agencies than to their own peoples. These elites are even more wasteful and given to consumerism than their Northern counterparts whom they seek to emulate. They are far more responsible for producing structures of inequity and exploitation in their societies than their counterparts in the North. This is not to underrate the importance of the fact that the roots of the contemporary patterns of inequality in the world are to be found in colonial and neo-colonial forms of dominance. But it is necessary to see that these forms have penetrated, or reinforced, the inequitous social structures of the colonized countries.

Misleading diagnoses

A number of diagnoses of the problem of persisting underdevelopment and glaring dualism between the rich and the poor nations – and, as the reflection thereof, between the rich and the poor in the poorer nations – are misleading.

The increasing population size of the poor, lack of motivation among the people of backward lands, decline in 'aid' from the rich nations, transfer of resources from development to defence in the developing nations, regional, linguistic and ethnic divisions in developing societies - are all examples of such diagnoses. Some of these (such as population growth) are mere symptoms of more basic causes. Some (such as the alleged lack of motivation among the poor) are entirely wrong. These diagnoses spring partly from the prejudices of scientists and social scientists and partly from the search for excuses by people seized by a feeling of guilt but unwilling to accept responsibility for basic injustices in the world and do something to redress them.

Basic issue: life-styles

The primary cause for large areas of underdevelopment and inequity is to be found in the global structuring of man-resource relationship, in which a minority of nations have in pursuit of a parasitic and wasteful style of life, shored up the large bulk of world resources. The spread of the same style of life among the elites of the countries of the Third World has meant that they remain divided, both individually and severally. These elites have failed to exert themselves at regional and world levels (except in endless rhetoric, mostly of confrontation). They have also failed to pursue within their own countries policies suited to their socio-economic, demographic and cultural conditions, which happen to be quite different from the conditions that obtained in the richer nations during their similar phase of development.

In spite of the rhetoric of confrontation a bond has been forged between the richer segments of both 'developed' and 'developing' nations, so that they continue to indulge in life-styles that result in the perpetuation of global inequity, depletion of world resources and unsettling of nature's fine balance. Thanks largely to modern technology, the dominant economic model (that it has nurtured and made almost universally acceptable), and the model's politico-philosophical underpinnings (in a 'theory of progress' that had stemmed from the presupposition of infinite expansion of nature's bounties that were promised to become universally and equitably available), the world is being ruled by elites incapable of handling the problems confronting it.

Intellectual brainwashing

The causes underlying all this are largely intellectual. If the world is

'structured' in a certain way politically, it is because the thinking that has dominated the world for the last hundred-odd years has been faulty. It has been centered on the idea of a uniform and homogeneous end product for all societies : a state of urban-industrial affluence, managed by experts at the top and backed by a capital-intensive technology – in short, the model of all-encompassing modernity. Even today, despite decades of misery and exploitation engendered by this model, the notion of catching up with those who are seen to be more 'developed', and along the same course, continues with uncommon persistence, not because it has the sanction of conscious deliberation by the large majority, but because it is sustained by the institutionalized interests of a small minority. In the process, a generalized erosion has taken place – of resources, of cultures, of equity. But the most appalling of all has been the erosion of the human mind in large parts of the world. Any attempt to undo the inequity and dualism of the present world must begin by undoing the intellectual brainwashing that has taken place under the impact of the modernist doctrine of development.

V. Significance of the environmental perspective

The concern with 'environment and development' is significant only in this larger political context and in the context of the intellectual necessity of redefining the whole purpose of development. It will entail the search for an alternative model of development based, not on specialized concerns of experts and aggregations thereof, but on something that is at once more comprehensive and more accessible to all human beings. It must promote a view of human welfare that does not assume some linear progression on some uniform pattern but, instead, allows for autonomy and self-reliance in a variety of local contexts so that everyone participates with a first-hand knowledge of actual conditions.

Basic approach

On environment there are many expert studies and, of course, there is yet much to learn. But the more fundamental insight that has emerged from the work of leading exponents combines four concerns: (i) a holistic view of development, (ii) a concern with a structure of equity that ensures autonomy and self-reliance of diverse entities in place of a structure of dependence that is sustained by the promise of aid and transfer of technology to enable others to 'catch up', (iii) an emphasis on participation, and (iv) an accent

on the importance of local conditions and the value of diversity. The import and implications of this perspective are just the opposite of those of the perspective of modernity as an inescapable panacea for all. Seen thus, the 'environmental perspective' is no more and no less than an alternative perspective on development. Specific aspects of the sustenance and improvement of the environment can, of course, be studied in specific contexts, and these may involve a series of technical tasks. But these are precisely the tasks that are involved in moving towards alternative patterns of development and life-style in tune with a conception of human needs and social and economic welfare to ensure a sustained improvement in the quality of life in all regions and a just and equitable international order.

A deadlock. It would be a gross mistake to think of environment outside of this larger global political context. This approach unnecessarily contraposes environment and development and thus makes the former appear as anti-developmental to one set of people and the latter as necessarily an encumbrance and nuisance to another. Such suspicions already exist. To treat different aspects of world development as discrete and independent dimensions has given rise to aggressive pessimism on the part of conservationists and an equally aggressive restlessness on the part of developmentalists. The problem is compounded by the fact that the conservationists are identified with the North and the developmentalists with the South. So there is at the moment a virtual deadlock on this issue with little sign of its resolution.

The irony. The irony of it all is that the conservationists come from the region where the development dogma (based on the doctrine of modernity) originated and the developmentalists come from regions which have traditionally taken an integral view of man and nature and are even today better equipped to pursue an 'environmentally sound' development path. The irony is made only deeper by the fact that, although the incessant pursuit of modernist development by Northerners over centuries has had gruesome economic and political consequences for the Southerners, the Southerners are so possessed by the need to quickly undo global disparities that they fail to see that they would never realize their goal if they pursued the path laid out by the North. In their own interest, as for success, they must reject this path. Incidentally, they will then find some of their best friends among the environmentalists. The environmentalists, on their part, need to make common cause with the advocates of global equity and a new international order, and to conceive of environment as providing a series of opportunities for pursuing a new development path rather than a series of constraints on development as such. Conceived in this way, environment too becomes a

resource – in fact, the most basic of all resources – for development. With this will end the impression of an adversary relationship between the two.

The nature of the present crisis

A more concrete analysis will make these points abundantly clear. The basic cause of the present-day scenario of crisis can be stated quite simply. Arising out of massive poverty in large parts of the world, growing disparities between and within regions, worsening terms of trade for poor countries and for rural areas within them which further widen these disparities, and a corresponding increase in dependence and decline in real freedoms, there is rising discontent and restlessness among the poor of the world. These are manifested in political instability, growing incidence of tension and violence, and the consequent feeling of insecurity among powerful nations and among national elites. All this increasingly endangers peace at all levels, regional and international. While the real causes of the crisis remain unattended to, the symptoms are tackled with increasing repression, accelerating arms race of various kinds, and the conversion of the whole world into a garrison state. And yet, so grave is the crisis, and so interwoven are its various elements, that it is only by getting to the root of the problem and tackling it with a clear head that a major breakthrough can be achieved in the human condition. It is only thus that a steady and sustained process of realization of values and aspirations in diverse regional and cultural contexts can be ensured, minimum levels of satisfaction and confidence attained in various centres of the world, and, through all this, a more stable basis found for international peace and co-operation.

What, then, is the 'root of the problem'? Without going into remote historical and philosophical issues (some of which have been touched upon in earlier sections), we may say that underlying both the general historical process that engendered the phenomenon of underdevelopment and the persisting – indeed, in some ways accentuating – state of inequity and poverty in our own time is the dominant model of development emanating from the West, a model based on the doctrine of modernity, the theory of progress, a manipulative view of science and a hedonistic view of human happiness.

The crucial aspect

There are many aspects (cultural, technological and political) of this historical process which cannot all be dealt with here. But the one that has proved

crucial in bringing about the present state of affairs is the growing conflict over the access, distribution and direction of world resources for maintaining and raising standards of consumption and life-style achieved by the urban middle classes in the industrialized world and, through emulation or prompting, by the middle classes everywhere. So powerful has been this model of a high-consumption life-style that it has undermined both the Liberal dream of expanding welfare for all and the Marxist dream of solidarity of the world proletariat ushering in an egalitarian, classless society. For inherent in the maintenance of this life-style is access to, and hence control over, energy and industrial raw materials. This necessarily creates and nurtures growing inequality - between rich and poor countries, between the tiny middle class and the large unorganized masses in the poor countries themselves, and between the proletariat of the rich countries and the proletariat of the poor countries.

Inherent in such a model of development are many other distortions of our time : the conception of the global economic process as a homogeneous whole, the consequent need to turn formally independent countries into economic colonies, the strident safeguarding of differential advantages of the industrialized countries through all kinds of trade barriers and simultaneous drive for dominance over the Third World, both as a supply base of cheap raw materials and as a market for expensive sophisticated consumer goods and gadgetry. All this makes it necessary to spread the culture of consumerism globally and at the same time to contain and confine the capacities of newly industrializing countries within narrow technological limits. Hence the crucial role of the multinationals. Above all, there is the increasingly global sweep of economic diplomacy for ensuring enough surpluses from the world countryside to meet the growing demands for resources of the metropolitan centres in the face of fast-growing populations in the Third World, which is bound to put some brakes on the traditional export orientation of their economies. Similar pressures and distortions follow from the effort of the urban middle classes in the Third World to retain, and hopefully raise, their living standards.

Inequity. All these concerted moves to preserve the economic advantages of the already advantaged generates an accelerating pressure on world resources and produces a structure of inequity and exploitation by eroding local autonomy and self-reliance and denying basic necessities to the large majority of the people of the world. So much for the present development model based on relentless consumerism.

It is the same ethic of consumerism that erodes environmental quality too. The present patterns of development are so wasteful and destructive of natural resources - land, water and entire ecosystems - that they are

producing an increasing and exponential growth in desertification, deforestation and soil degradation, which together are leading to an overall erosion of the productive process itself, and most of this in the developing countries.

Relevance to developing countries

Those who think that environmental erosion is largely a problem for the industrialized countries are quite off the mark. For, increasingly, the reverse is taking place. Even pollution, which was supposed to be confined to industrialized countries, is increasingly being 'exported' to the countries of the Third World. And pollution is but a minor aspect of the environmental problems, the more important aspects being the depletion of renewable resources at a rate faster than their regeneration alongside the exhaustion of non-renewable resources, a rising rate of withdrawal of marginal land from productive use (thanks to biological degradation and desertification) and many other forms of decline in productivity, arising from the application of alien forms of technology and the systematic undermining of indigenous traditions and skills that were best suited to local conditions. Such intrusions into the local environments have not only increased disparities within and between regions but also increased dependency across the board all over (of the countryside on the cities and of entire countries on outside forces), undermining, in the process, local self-reliance and participation of local communities in making decisions that vitally affect them. Environmental erosion is, thus, no more than a physical and ecological expression of the overall erosion of societies wrought by development patterns fostered by consumerism.

VI. Approach to alternatives

It follows that the movement towards an alternative model of development should apply to all regions of the world, whether 'developing' or 'developed', and that it should combine in its framework both a sustainable process of development, through a continuous regeneration of renewable resources, and a reduction in resource and income disparities between and within regions. Such a symbiotic relationship between environmental and socio-political goals is inherent in the conception of an alternative pattern of development. In what follows we shall spell out a few basic postulates.

1. Removal of poverty

The goal of development at the present time should be, first and foremost, the removal of poverty, not a mere increase in national product (which more often than not leads to wasteful consumption by elite strata with little or no benefit to the poor). Now, removal of poverty entails a series of sub-goals such as removal of disparities across regions, between cities and rural areas, and between the rich and the poor within each sector, as well as between the present and the future generations. Even this is not enough. There is need to categorically direct development to the benefit of the poorest strata, giving up the dictum that inequality and income differentials are inevitable in the process of growth. This involves a different approach to technology, resources and environment. Removal of poverty is not possible under conditions that denude basic resources of nature to which the poor had always had access and for which they did not have to depend on institutionalized decisions. There is need, therefore, to move towards a model of development that has the potential of providing prosperity with utmost equity and in harmony with nature (i.e. by preserving its resource base for sustained development for all classes and for future generations).

2. Equity through local self-reliance

Development for equity entails the recognition of the primacy of local development and an end to external dependence. In the existing pattern of development, the villages are dominated from outside the locale, the society as a whole by a class of technocrats and entire nations by global purveyors of technology and power.

The goal of development should, instead, be actualization of the potential of each locality. Such potential would be found to be quite extensive, once the drain to the outside world dictated by the present patterns of development and decision-making were brought under control. This involves maximum reliance on renewable resources, regulation of the speed of such resource use, and recycling of resources within the locality. In point of fact, resources available within a local environment are more in tune with the requirements of the area, and most of these are nature's free gifts which do not lend themselves to outside controls except when a society surrenders its options under the hypnotic sway of imported models. This also implies that the conception of alternative development is itself not uniform, though it is certainly informed by certain norms and the historical context (on this more later). Plurality is in-built in this view. It is a conception of *alternatives*.

3. Self-reliance and decentralization

The need, then, is for greater self-reliance in every locale, maximum utilization of nature's resources for productive use at decentralized levels, and the orientation of scientific effort to the problems of the common man. Only thus would Gandhi's vision of not only production for the masses but also by the masses be realized.

4. Development as liberation

Such an approach to development, once implemented, can have far-reaching consequences. It would be the best insurance against the drain of resources to the affluent areas and against the shoring up of world resources by a minority of nations. Within each country, it will improve the terms of trade between agriculture and industry, and between rural and urban areas. And within the village society, too, once the drainage of resources and the perversion of institutional structures and information flows, due to rapacious technology, are brought under control and the traditional understanding of nature's life-support system allowed full scope, there will be less scope for exploitation and greater scope for equitable relations and broad-based participation of the people in the productive process. The new development pattern, in other words, involves a whole chain of liberating measures – from the country as a whole to the last man in it – and makes it possible to tap the vast potential that nature can provide but is not allowed to. Environmentally, such a pattern of development opens many doors. By minimizing the use of depletive assets, it preserves resources for underprivileged groups in the present (for the living generations) and in the future (for the generations to come). By promoting a use pattern that is in consonance with nature's principles (such as recycling and symbiosis), it controls pollution and promotes health and well-being. By enabling a diffuse pattern of resource-flows, it enables man to escape centralized control over life's basic needs. In short, it becomes the catalyst of a genuine alternative to Western-style industrialization and the harbinger of a non-elitist path of development for all.

5. Endogenous science

Such a model of development (aimed at removal of poverty and disparities, ensuring of equity between and within regions and generations, encouraging autonomy, local self-reliance, decentralization and people's participation)

will necessitate a redirection of scientific effort itself. It calls for not only the much-talked-of 'regeneration of villages' but also the regeneration of science. Under the present model of development, the main emphasis is on 'transferring technology' to the developing countries and 'taking technology' to the villages. In both cases the presumed beneficiaries are treated as passive recipients to whom a set of standard techniques and practices, evolved in some advanced country or institution, are to be doled out. The monstrous arrogance of this approach is obvious, but no less obvious are the deleterious consequences to both the autonomy and the well-being of millions of people. What is called for now is a radically different approach, which makes villages the bastions of scientific inquiry. There is a lot to learn about the mysteries underlying traditional practices of recycling and about the endless web of interrelationships between diverse land systems, water resources, plant physiologies, animal and bird species and other elements in the rural ecosystem.

6. New road to prosperity

Once such a spirit of learning develops, it will become possible to draw upon the rich potential of biotechniques based on nature's principles. It will then become possible to avoid rapacity and at the same time promote prosperity and well-being. This can be done by an in-depth study of each component of a specific environment – its air, water, soil, plants, animals and other living elements in it, and interrelationships between all these. A knowledge of these various processes will provide scope for not just an equitable and decentralized pattern of development but, through it, for continuous improvement in the quality of life of all strata of the people.

It is essential to restore the original symbiosis between science and nature which has been disturbed because science has become an instrument of exploitative technology (to which reference was made early in this paper). The approach proposed here also corrects another mistaken notion, namely, a negative view of the environment as something that imposes constraints and 'limits'. While certain constraints must be respected, as they are based on sound reasoning, there are also immense opportunities for growth which are provided by the same environment. Garnering of such opportunities should be the task of science.

7. Approach to nature

The new approach to science and to development suggested here is based

on a certain perception of nature and man's relationship to it. The presumption that the role of science is to master nature and harness it in the service of man has turned out to be an illusion. This must give place to the original purpose of science, namely, understanding the processes of nature – the opportunities it provides as well as the constraints it imposes. Planning the development of a given area becomes easier with this understanding.

Such an approach will make for a partnership between science and nature (in place of an adversary relationship, as at present) and – this is equally vital – between the scientist and the villager. There is a vast area of research and development that lies ahead in this field. But it will need to be based on a different philosophy from the one that usually informs R&D establishments. The scientist will have to take on a more modest role – as a participant in a total system of relationships. As was stressed earlier in this paper, one of the basic postulates of an alternative model and philosophy of development is to treat life as a whole and not in fragments. This calls for a perspective on science that is Oriental rather than Occidental.

VII. Environment and development in Asia and the Pacific

This may be the point to move to an exemplification of the postulates of an alternative perspective on environment and development in the specific context of the Asian and Pacific region. Of course, almost all the references to the Third World made in the preceding sections hold also for this region; conversely, many of the points made below will have relevance to large parts of other Third World regions. It would nonetheless be instructive to illustrate and exemplify the general issues already raised in the specific context of this region, because, among other things, many of the points made above become more pertinent when applied to this region. The population one deals with is much larger, the poverty in large parts of the region more abysmal, the extent of disparities in the region more striking than, say, in either Europe or Africa, and the agro-climatic conditions poorer than in more temperate lands. On the other hand, there is much to draw upon in the Orient: rich traditions, some fundamental and rather original thinking in the recent past, and a background of philosophy and metaphysics that may be more hospitable to austerity and self-control in life-styles, once the need for them is demonstrated and external influences submerged in a new search for identity and potency.

Agriculture

Particular mention must be made of the technology that has come to be encouraged in agriculture. The use of chemical fertilizers and pesticides upsets the chemical balance of the soil, interferes with nature's own process of recuperation and destroys the biological property of the soil by killing the micro-organisms in the soil–which Charles Darwin called the *builders of civilization*. Even in the cold and temperate climates, where nature has provided better conditions for preservation of soil humus, the non-specific use of these chemicals is harmful. Far worse are their effects in a tropical country where high humidity and high temperature lead to quick decomposition of soil and organic matter. The orientation to this technology has also blinded us to the compensation nature provides the tropical countries in the form of lush vegetative growth – e.g., water hyacinth, ferns that harbour nitrogen-fixing algae, tropical legumes like the winged bean found in Papua New Guinea and Southeast Asia. All these can be used to replenish the soil humus, provide rich manure and open up possibilities of intercropping (e.g., with legumes which yield proteins and fix atmospheric nitrogen). They also act as solvents of toxic effluents, as deodoriser, as purifier of water and as sources of methane for lighting homes. If the present technology is allowed to continue, the productive lands blessed with such gifts of nature will be reduced to dust bowls, the streams polluted to stinking sinks, and the food chains – from micro–organisms to plants and animals – will be poisoned with chemicals.

Industry

In the industrial sphere, the focus so far has been on economies of scale and productivity of money capital rather than on the productivity of man and the local natural resources. The drive is towards making the production process more capital–intensive, beyond the reach of most in this region. Inherent in this is the concentration of production as opposed to diffusion of initiative. And the concrete result of this overall production system is that there is no solution to the unemployment problem, even at the present population level.

To tackle the twin problems of poverty and unemployment, the need is to explore techniques which would have a liberating role – techniques which, while defying control by the large–scale industry or the rural rich, will release the potential for greater opportunities of income and employment generation. This requires, in the first instance, a deep understanding of the physical laws, the life–support system of the planet, and the interactions of the components

in each micro-environment. The deeper our understanding of the life sciences, and the less our dependence on the short cuts provided by Chemistry, the simpler and less expensive will be the techniques.

Industry versus agriculture. One of the effects of the doctrine of modernity is to discount agriculture and put a premium on industry. This is indefensible. Agriculture is production of wealth from the bowels of earth, it is renewable. Industry, on the other hand, is extraction of a depletive resource and its processing into a more usable form. There is, therefore, no comparison between the two. The former is far more important for the well-being of the people in this region. Moreover, in future, as the costs of air purification and water purification come to be borne by the industry, the recourse to large industry will be reduced.

Question of size. Certainly, this does not mean that the large industry, or even the heavy industry, will need to be scrapped. The solution does not lie in discarding technology altogether. An abrupt end, a discontinuity, is inconceivable. A change in social institutions can hardly be successful unless it achieves a large measure of consonance between the new and the old. As alternative technologies grow, the incidence of the existing technologies will get reduced. All the same, efforts will have to be made to reduce the ecologically harmful consequences of the existing exploitative technologies by suitable modifications. What really needs to be restrained is the ideology of *industrialism,* which seeks to build a large industry to feed another group of large industries and so on. In this spiral, an industrial island gets built up which neither supports, nor is supported by, the life of the masses. That is the way to an *enclave society,* which cannot last.

For a stable society, small industries have to be ubiquitous, medium industries being allowed to spring up wherever the need is felt. There is, no doubt, need for large units too. But these will have to be under rigorous social control. Herein lies one major difference from the present pattern. Whereas the present-day orientation is pressingly towards the large, the new approach would require the large as a last resort, only to perform the functions which neither the medium nor the small is capable of performing.

Energy

Associated with the revival of interest in agriculture and organic fertilizers is the increasing emphasis on recycling of human and animal waste; for the soil health of tropical lands depends so much on the return of waste products to the soil in an assimilable form. The technology of recycling can be extended

much further to include water, wind and the sun. These are called renewables because they are being continually recycled. The technologies of irrigation and generation of hydro-power, wind-power and solar-power come under this category. A thrust is needed now for an advance in these technologies.

In recent years, hydro-power has received greater attention than it had earlier, but the initiative for micro-hydro projects is lacking even now. We need to shed our attitude of dependence on the distribution systems of the large central power plants if we are to reach power to the rural areas. In China, as in several European countries, the manufacture of low-power hydroelectric sets has been a vigorous activity for long. This example should be followed in this region.

Wind is more readily available than falling water. Even the industrial nations are now recognizing that there is considerable benefit in 'harking back' to small-unit wind-power technologies. With renewed interest in this ancient technology, ideas which were neglected earlier will certainly be revived. Thus, in both hydro-power and wind-power, the traditional technology and the latest understanding in life sciences get intermeshed.

Solar power. One distinctiveness of sun's rays (as of wind) is that these are pervasive and diffuse, hence more suited for decentralized production. When efforts are made to get these concentrated at one place in vast amounts for commercial production of power, the capital investments become very high. This is the reason why the US commercial firms find that the array of equipment needed to obtain solar energy is far more expensive than the equipment used to obtain energy from coal.

Most parts of this region receive high-intensity and fairly uniform sunshine for ten months of the year. The scope of harnessing solar energy is, therefore, great. Only the price is to be brought within the reach of the common people.

Photosynthesis. Solar power generation and solar engines-and-pumps are two aspects on which useful research is under way. Photosynthesis, however, is by far the most efficient means known to mankind for tapping solar energy. This means that trees will continue to be a major source of energy for villages. The reason why people now shudder at the thought of felling trees is that for decades we have, in our rapaciousness, gone on denuding tree-lands without caring to regenerate. We have to make amends for this (i) by building a permanent forest belt in all dry areas and wherever high-velocity winds are prevalent; (ii) by bringing every bare hill under a protective vegetative cover; (iii) by raising mixed forests of grass, fuel trees, and trees for production of leaf fodder and fruits on wastelands; and (iv) by scientific forest management of the conserved – that is, natural – forests. Fuel-wood trees have to be on village commons, on boundaries of fields, on lands lying

on the side of the roads and railways, on banks of canals and ponds, as also on all other available sites. No doubt, these trees will have to be of the fast-growing species.

Since the pressure on land is tremendous, it is undoubtedly difficult to secure the release of land for this purpose. This will be the test of the leadership. It will have to rouse consciousness and convince people that while it will provide for the local necessities of the people for fuel, it is also essential to protect and multiply reserves of forests and village commons which serve the common purpose of all in respect of soil and water conservation, insurance against drought and flooding, protection of environment and supply of energy.

Water

There is also a big task waiting on the water front. Nature provides a balance in every micro-environment. There has to be a balance (and a process of recycling) between land and water, on both the surface and the subsurface levels, and in every locale. In our distorted concept of modernization, we have in most places extended motorable roads in a manner that has partitioned the canals and choked their flows. As a result, the seepage effect of the canals has stopped and the underground water table has gone down in the neighbouring areas. The canals in the past were interconnected as a means of travel and commerce. With the drying up of canals, what we in South Asia call the dinghies (transport plying in the canals), are disappearing.

And not merely the canals. In South and Southeast Asia many of the rivers, too, have been silted up in large parts. These cause floods during the rains and limit the scope of inland waterways. Rejuvenation of these rivers is a must for irrigation, flood control, and a network of inland waterways, each of which is important. Any more drift in this regard would, in a few decades, endanger the very survival of entire communities.

Employment

The specific tasks facing poor countries in the region are thus many. Their handling has to be informed by one idea - the restoration of basic resources whose further erosion can seriously endanger the prospects of improving living conditions. Attending to these tasks, on the other hand, can generate massive employment, which is the crying need of many countries in the region. Indeed, by redirecting the emphasis of economic growth from per capita income (which is no more than a statistical abstraction) to employment

generation, development of the type recommended here can be pursued without sacrificing future production potential and resource base of these societies; indeed, these will get enriched.

The new order

It is precisely this type of development that can release man's initiative for a new order of production 'for the masses and by the masses' as well as a new order of civil society based on equity, local self-reliance, which can generate a sense of sharing and participation, and a feeling of communion with nature, on the one hand, and science, on the other.

Gandhi and Mao

This last point is of the utmost importance. One reason why the concept of equity has not fructified is the lack of scientific backing for it. There is at present a virtual divorce between political philosophy and scientific striving. As a result, outstanding thought from this region – such as Gandhi's conception of self-rule for the poor and Mao's non-elitist path of development – have failed to gain long-term acceptance even within their own societies. While lip service is paid to their ideals, the state in both societies has placed overwhelming emphasis on centralized control of the economy, in the process breeding a power elite. Similarly, Karl Marx, who is known as the prophet of equality and whose name moves millions in this as in other regions, had dreamt of doing away with centralization of power and eradicating the distinction between town and country and between manual and intellectual labour. Yet, he too had failed to question the technological centralization involved in modern industrialization; all he advocated was that the means of production should be owned and controlled by society.

In both capitalist and socialist societies, the whole emphasis of scientific thought has been on social management, not on more basic processes of nature. However, it has become abundantly clear in the thinking of leading scientists themselves that social organization must seek consonance with processes of nature, not abjuring intervention as such but making each intervention maximize nature's operating principles for the benefit of man. The most significant of these principles is diversity, which entails locale-specificity in resource management, and hence a diffuse and decentralized process of decision-making in the spheres of production and consumption as well as in the determination of surpluses and life-styles.

It is not that Gandhi, Mao and Marx were wrong in their philosophy.

It is rather that they or – in the case of Gandhi – their followers pressed a wrong and outmoded science in realizing their ideals, a science that no honest scientist could accept as real. The task that faces these societies now is to redirect scientific effort in the service of the ideals of Gandhi and Mao. This calls for a different conception of the purpose of science from that found in the West. To the Western mind, science, like all knowledge, is an instrument of secular power for creating a good *social* order. We must reject this as at once inadequate and dangerous. It is dangerous because power as the end of knowledge usually degenerates – irrespective of isms – into power of the few over many. It is inadequate because creation of a good social order can be no more than a means, the end being the liberation and self-realization of each being.

We come here to the Oriental conception of knowledge as a means of seeking truth, which, in turn, is a means of liberating the self. (In Oriental thought truth is not an end in itself.) This chimes in perfectly with the conceptions of diversity and decentralization. But Gandhi's basic principle must be borne in mind, namely, that such liberation is to be of all individuals, not only of the educated and the better-off. Indeed, as he insisted, it should begin with the 'last man' first. Such a conception rejects the dualism inherent in the Western paradigm and seeks the ends of the individual as well of society in a composite philosophy of nature. With this also, incidentally, disappears the discord between society and ecology.

VIII. Towards a framework of policy

We have in this paper considered in quite some detail the historical and philosophical background to the development *problematique* of our time as well as the perspective on alternative development approaches, both generally and in the context of this region, with references to, and exemplifications of, a specific kind wherever necessary. We may end the paper by translating this whole exercise into a set of policy perspectives for an alternative pattern of socio-political and techno-economic development in the Asian and Pacific region. We shall do this in a broad and comprehensive developmental framework which would include the main orientation of the environmental perspective. We have discussed the specifics of this perspective in some detail in the last two sections. We shall now try to embody it in a set of alternative development strategies. We think this is vital if the environmental issues are not to get isolated from the main thrust of the development debate in our time. It is also widely recognized now that basic concerns like education and health, institutional parameters of a desirable course of development,

and changes in social structure are all fairly central to the environmental perspective. It is to this overall policy framework that we now turn.

Basic strategy

We shall begin by focusing on three major facets of a basic development strategy.

1. Life-styles. While retaining a good deal of cultural and individual diversity, we ought to evolve a consensus on such matters as desirable and undesirable consumption standards, use and distribution of resources for the gratification of needs, and norms for minima and maxima in incomes and wealth.

2. Organization of space. There is need to stop thinking of 'rural' and 'urban' as separate sets of entities, but, instead, to think of them as a single (albeit cellular) structure composed of city, town and countryside, agriculture and industry, and hinterland and metropolis. The utopian dream of village self-sufficiency may be left behind (after all, such a system, when it prevailed, had very many negative features), but we must avoid the scenario of huge metropoles draining the resources of the countryside in a parasitic manner. The scenario to work for in these countries (with the exception of city states) is a social continuum in which the country is studded with a few thousand localities (regions), each clustering around a medium-size town, all sharing the amenities and the economy in a relatively egalitarian manner. In such an organic structure all strata of society would gain from the benefits of development while avoiding the ills of modern consumer societies that are prisoners of highly concentrated production complexes.

3. Production system and technology. Such a structuring of space will need to be supported by a corresponding continuum of productive orientation and technology relevant to each component. The strategy will need to be integral to the development of a country as a whole. It will aim at decentralizing both production and administration to medium-sized towns and their rural hinterlands, arresting city growth rates to prevent cities from becoming grotesque, supplementing employment opportunities in agriculture (which has some natural limits) by employment in small and widely diffused industries, locating educational institutions close to jobs (de-emphasizing the importance given to university degrees), providing widely scattered training institutions for short-duration courses for middle-range technicians in various walks of life, extending health facilities to the unprivileged, and so shaping the economy that it derives its strength from the purchasing power of the great

numbers of the people, and not from the demands of a small consumerist middle class. Implied in such a restructuring of rural–urban and agricultural–industrial relations is a new techno-economic model. The new emphasis on rural development in a large number of countries in this and other Third World regions is to be welcomed as a departure from the earlier norms of urban-based industrialization. But it is still necessary to think of rural development as part and parcel of a larger model, a model in which we talk less of rural development in the usual segmental fashion and more of development of individuals and communities – of all of them, irrespective of distinctions of locale or class. It is only in this overall context that the emphasis on 'rural development' will make sense.

Scenario for the future

It is from an optimal interrelationship of the above three facets that a comprehensive design for the future emerges. We give below the essential components of such a design.

Principal focus. The prime concern of economic policy for a just social order ought to be to generate enough employment to absorb at least the new additions to the adult population, and, ideally, the backlog of unemployment and underemployment. It is necessary to emphasize this because the major source of injustice today is to be found not so much in a condition of general scarcity as in the fact of the diminishing marginal utility of men and women as such, in the fact that millions of people find themselves idle and useless, often in their very prime of youth.

Agricultural transformation. The major impetus for such employment will have to come from a transformation of the agricultural sector, its conversion from an area of stagnation into a catalyst of growth. This can be achieved, first and primarily, by introducing and rapidly implementing an agricultural technology based on renewable resources at a rate commensurate with their regeneration. With the inputs associated with it, the 'new technology' does seem to have provided a major breakthrough in many parts of the region, enabling them to achieve self-sufficiency in food and other raw materials, and at the same time to raise the status of agriculture in national priorities. However, there is need to adopt these practices with conscious care to try to adapt them to fulfil social goals and to ensure endogenous development and local self-reliance. They must substantially raise employment and the incomes of the poor, not just aggregate output. There is need also to attend to other practices: crop differentiation that can increase the amount of labour needed

per acre of land and raise the income of labourers; development of water resources that are suited to the needs of small farmers and tenants; combination of large inputs of organic with small amounts of inorganic fertilizers for maintaining a sustained process of productivity; encouragement of farm practices that are labour-intensive with simultaneous discouragement of mechanization that is labour-displacing; and provision of relevant credit and infrastructural inputs for small cultivators. All this, in turn, calls for the other package of measures known as land reforms, so that the benefits of agricultural development are widely dispersed instead of being pre-empted by the well-to-do farmers (as has occurred in so many countries), so that the rural social and economic structure becomes more egalitarian, and so that the available land is able to provide employment and a minimum income to millions more families than at present.

Rural industrialization. In large parts of the world, it is safe to predict, the sum total of reforms involved in a new agricultural drive and redistributive legislation will not be enough to sustain a growing population on the land. Studies on man-power absorption by different sectors of the economy show conclusively that, except in the few places with very low density and large surpluses of land, there comes a stage when agriculture begins to absorb a diminishing proportion of the rising population. It does not follow from this, however, that those not engaged in agriculture should take to the cities for jobs in modern industries, for the fact is that the latter are not as great employers of men as they are of machines; and, in any case, the investment needed to generate the needed employment through modern industry is of a scale that few among the poorer countries can afford – except by large-scale import of foreign capital, which is neither feasible nor desirable.

In the light of various other trends – unbalanced resource use, congestion, breakdown of city life, and growth of crime and violence – it is necessary to restrain large-scale migration to the cities. There is need, therefore, to provide non-farm employment in the rural and semi-rural areas. This can be done, first, through massive public works programmes to construct durable community assets and to restore local resource endowments – such as water tables, communication networks and sources of energy that are endogenously available in various locales – and the ecosystems. There is great scope for this in our millions of villages and tribal settlements. Employment in these public works can take on a role quite different from that of short-term relief operations. They can become a basis for long-term investment, and a means of reducing costs in such spheres as energy generation, water use, land consolidation and marketing of farm output. This is the formula for generating more productivity, more employment and more incomes. A large part of these activities can be supported by increasing food output, which will

restrain inflationary tendencies. Improvements in agriculture can also be used as a stimulus to a whole line of processing and refining industries in the rural areas.

Such a combination of increased farm output and increased employment on land and public works should, through stimulation of demand for consumer necessities, lay the basis for the growth of small towns close to the rural areas where medium and small-scale industries can be located. The usual haphazard growth of towns and cities that takes place in the absence of conscious policy renders them essentially parasitic spots, where middlemen bring the flashy products of industries from large cities (and imports from foreign lands which, of course, continue to tantalize men and women in these lands) and tempt villagers into buying them at exorbitant prices. This should give place to a conscious policy of decentralized industrial location and development, so that urban growth becomes complementary to rural development and contributes further to the growth of employment and incomes of the poorer strata. The chief casualty of the colonial period was a whole range of rural and semi-rural industries and a number of non-agricultural occupations that gave livelihood to large sections of the people, made for a society that was far less unequal and centralized than at present, and caused far less damage to local resources and local environments. It may not be possible to revive the whole spectrum of these occupations, but it is possible and necessary to provide a new basis for fulfilling the same economic function of making work other than farming available. The encouragement of self-employed artisans, the cultivation of the finer arts and crafts in line with the rich and complex traditions of this region, and the growth of new and small-scale industries for the manufacture of goods by the local people for local needs can provide the basis for this regeneration.

Social continuum. The crux of such a combination of policies (designed to raise employment and alleviate mass poverty) is to put agricultural and rural development at the core of public policy. But there is a counterpart to this approach in the area of urban development and industrial policy as well. Apart from heavy industries, which require large capital inputs and centralized organization, industrial development should be employment-oriented as much as possible, should produce goods that are needed by broad strata of the population rather than by a small middle class, and should be widely dispersed over the country so that the employment that it generates benefits all areas rather than a few cities or regions as at present. Regional disparities constitute a crucial, and visible, dimension of social injustice. Most of the favoured regions in Asia are those that have large urban centres.

Socially, this means that the present duality of city and countryside must give place to a continuum in which an ecologically balanced and socially

equitable agricultural development (with its necessary concomitants in livestock, horticultural and forest development) regenerates the villages, small-scale and medium industries located in it reinvigorate the town, leaving large-scale industries that necessitate heavy inputs of capital, machinery and complex organization to the cities, which, with reduced pressure on civic amenities, will be better places to live in. As such a fusion between industry and agriculture takes place, further intermediate links in this continuum – rural social structures in towns, urban amenities in villages – will develop. Thus can the best traditions of both rural and urban life be combined to produce a composite and integrated culture.

Our preferred scenario for the region should be not one made of millions of self-contained villages but, rather, one of thousands of small nucleating towns towards which the rural landscape gravitates. This will put an end to the present duality of metropolitan and rural cultures. The limiting of large-sized and concentrated location to just the industries that cannot do without them will enlarge the size and horizon of rural communities, and provide them with the necessary infrastructure of welfare and communication facilities. Such a spatial structure – supported by a decentralized structure of community decision-making, as argued below – would provide the necessary framework for the techno-economic alternative to the present dualist model of city versus countryside.

Policy on education. It is not simply by altering the economic basis of rural-urban relationships that a more equitable and composite social order will be created. We also need to alter the cultural underpinnings of the present patterns of dominance and disparity in life-styles. Very important of these in most poor countries is the educational system, the aim of which continues to be to produce colonial-type gentlemen, constituting a class apart alienated from the larger society.

In most ex-colonial countries, formal education was initially meant to produce an elite – mainly to fill the ranks of the bureaucracy, the law-and-order establishment, and the technical positions in public administration and private enterprise. This orientation still persists in spite of the achievement of independence and in spite of the political elite's commitment to democratic and socialistic ideals. Education, far more than property or income, is the fountain-head of privilege in these societies.

Meanwhile, a vast majority of the population continues to be illiterate and unskilled, and the ranks of the highly educated in the urban areas seeking cushioned jobs keep swelling. Studies in this area suggest that, whereas the expansion of literacy and primary education produces very rapid and rich dividends, higher education, after a point, becomes counter-productive. Acquisition of a minimum education greatly augments skills, generates

self-confidence and self-esteem, enhances the capacity to relate to the outside world, gives a feeling of political efficacy, and generally equips one better to enter the employment market. In contrast, an indiscriminate expansion of higher education beyond the absorptive capacity of the economy produces an alienated class unable to relate meaningfully to the rest of society. Its members seek refuge in all levels of the bureaucracy (making it increasingly inefficient and insensitive to the needs of the people). With growing unemployment in its ranks, this class loses self-respect and becomes aggressive.

The polarization between a large mass of illiterate and totally unskilled, and hence unemployed, people and a class of people who are overeducated, but unemployed because of it, is a natural result of the hiatus between the elite and the people and between parasitic cities and depressed countryside (discussed earlier). We must alter this condition by allocating a major portion of resources to mass literacy, primary education and adult education programmes, by giving special attention to the economically weak and socially handicapped strata for whom the only major avenue of mobility seems to be education, and by so reorienting the job market as to make employment within a wide spectrum of non-technical jobs available to those without college degrees.

The importance of widespread literacy in generating massive social and economic transformation cannot be overemphasized. Poverty is, more than anything else, a cultural condition. If poverty breeds poverty and thus perpetuates itself, it is because it is located in a particular cultural milieu – a milieu of ignorance, isolation, segregation and an extremely low self-image of the poorer classes, who suffer exploitation without protest because they consider exploitation the natural state of affairs. This situation cannot be changed except by a basic cultural attack. And the primary precondition for this is literacy and minimum education. One of the unfortunate consequences of the recent attack on schools and education in some Third World countries is that upper-class elites that have already cornered educational resources and occupy bureaucratic and professional positions (and send their own children abroad for studies) have been busy pruning down educational programmes – precisely when such programmes were beginning to spread to backward regions and so-called lower classes. Though the motivation of its authors is clearly different, the 'deschooling' thesis poses the same danger as the 'limits-to-growth' thesis.

There is need to give special attention to the education of women. In most parts of this region, as in the Third World generally, including the few islands of prosperity, women are less educated than men; within the depressed social strata and ethnic minorities the gap is even more pronounced. Meanwhile, the daughters of the rich are flocking to the universities. It is

from among these that leaders of women's liberation movement in these countries are drawn. It is this that makes the movement a movement for the liberation of the privileged. The gaps in education both between men and women and between women and women are an important source of the persisting duality of cultures, disparities in economic levels and consumption standards – the latter more often than not being a direct function of the perennial shopping to which the educated women are so addicted. This duality is reflected also in the way the children of the rich and the poor are brought up. Sharp disparities are thus perpetuated for generations to come.

Lack of education of women is an important cause of the exploitation of women, a marked characteristic of these societies, though expressed in modes quite different from those in the West. The main basis of this exploitation is economic, and it is found at its worst in the lower strata – wives and daughters working outdoors as hard as men from dawn to dusk and then doing the entire household work while their menfolk indulge themselves in drinking and gambling. The only way of breaking out of this 'culture of poverty' and triggering off a process of social reconstruction is education for all, but most of all for women and specially for women from poor and underprivileged strata of society. Apart from the poor and the underprivileged strata, there are specific ethnic groups in which women are assigned a subsidiary status - a condition perpetuated by wide gaps between men and women in their access to cultural institutions, economic opportunities and political movements. The Muslims in South Asia and parts of Southeast Asia are a case in point. Both the general standing of the Muslim masses (as distinct, of course, from the small urbanized and educated elite) and the status of women among the Muslims have suffered from the low educational standards of women.

The ethic of consumption. Even more fundamental than the gaps in literary culture are the gaps in material culture that divide the urbanized upper and middle classes from the people. The most important and glaring contrast is to be seen in the extraordinary consumption levels and material possessions of the richer and high status groups in Third World societies, almost parallel to the standards set by the high consumption societies. The lust for more and yet more things has become so myopic, especially in Southeast Asia, that it has given rise to all kinds of unethical practices, chief among these being a high level of corruption among public officials and a thriving 'informal' economy that is sustained by the easy availability of a large array of consumer goods.

Apart from the vulgarity of such ostentatious living in societies characterized by poverty and malnutrition, and apart from the creeping corruption to which it gives rise, such a standard of consumption undermines the whole

fabric of economic policy. Having already discussed the erosion such a life-style causes in a society's resource base, its autonomy from external dependence and its psychological and cultural foundations, we will confine our remarks here to a more pragmatic aspect, namely, the pursuit of economic policy that aims at equity and welfare. If a massive programme of employment and social welfare is to be generated, a high rate of savings becomes necessary. This implies a high rate of savings among those with large incomes as well as a restraint on salary and wage increases among the employed classes, including the working class (in a poor country to be employed is itself a privilege), so that resources can be transferred to employing the unemployed and raising the income levels of the poorly employed and the underemployed. It would be necessary, too, to encourage voluntary savings among the working class, the farmers and the lower-middle classes who have already reached an income level high enough to provide for basic consumption needs. At the same time, the consumption of the really poor sections must be raised substantially both for increased productive efficiency and for equity.

All of this calls for an *ethic of consumption* that discourages ostentatious living, cuts down the production and consumption of non-essential items, and shifts production priorities towards fulfilling the needs of the poor. But this will be an impossible task unless the pace-setters of society themselves adopt a consumption ethic that encourages austerity and reduces the gap in material culture between the different classes. Gandhi put his finger on the most crucial dimension of the problem of moving towards a just social order when he called for a *limitation of wants* and warned his countrymen against falling prey to an industrial machine that not only reduces a majority of men to labouring slaves, but also dictates what and how they should eat, wear, dress, sing and dance. Today his insights are even more relevant than when he was living. If men and women are to achieve autonomy and dignity and a sense of wholeness, they ought to exercise self-control; autonomy without self-control degenerates into exploitation. If there is to be an end to exploitation and inequity and aggression in society and degradation and rampage and devastation of nature, the present norm of a high-consumption ethic must give place to one that both meets the minimum needs of all men and limits the needless expansion of wants that have no relationship to the basic requirements of body and mind.

The nature of production. Built into such an ethic of consumption is also an ethic of production, which is critical to the achievement of justice in society and balance and harmony in nature. The current notions of social justice derive from a concept of economic equality that is essentially distributive. It is not surprising, therefore, that both theoretical understanding and empirical evidence have underlined the need for first expanding the size of the

cake and then distributing it. Part of the problem is that both production and distribution are thought of in terms in which the mass of the people are reduced to a position of subjects and onlookers. An economic ethic that seeks to meet the consumption needs of all while limiting the flow of inessential commodities involves a simultaneous increase in the incomes of the poor and the output of goods that they will need to buy with those incomes – and these are goods that are produced primarily with the help of natural processes and only marginally with the help of machines. The inessential 'wants', on the other hand, require a reversal of inputs with greater reliance on man-at-the-machine than man-in-nature. This means that, instead of conceiving production and consumption as two separate activities mediated by impersonal and inanimate agencies, we should aim at an economic system that, to cite Gandhi again, not only produces for the mass of the people but also enables the mass of people to become producers.

As with all visions, perhaps this, too, is an ideal. But, surely, it is possible to *initiate* a movement towards such a state. In practical terms, this calls for a location policy that, while permitting large-scale organization where it is unavoidable, will encourage a location-specific, small-scale, labour-intensive and decentralized pattern of industrial development. Similarly, the market economist's retrogressive concept of 'effective demand' (in simple language, that only the needs that are backed by the existing distribution of purchasing power are worth producing) will have to give place to a concept of need-based production, so that the real needs of the people as a whole determine what goes into the package of production. A combination of such a production system and the consumption ethic outlined above will lead to a climate in which progress towards dispersal and decentralization of economic power becomes possible. As this happens, the orientation to social justice will become less technocratic and become more political, thus giving scope for initiatives from below. It is also an orientation that is in harmony with nature rather than exploitative of it. Thus will the social norm of an equitable order coincide with nature's own conception of order.

Health and nutrition

Major victims of the present structure of consumption and production are the large numbers of people in poor – as well as in some rich – countries who suffer from acute malnutrition, and from the resulting physical and mental deficiencies. Their numbers are likely to increase in the next few decades. While demographers and bureaucrats are busy propagating birth-control measures to ward off an 'explosion' some time in the next century, inadequate attention is being paid to the problem of enabling those who are

already born and who will be born in the next 25 years (only after which is population planning initiated now likely to have an impact) to live a normal life and put in sustained work for their livelihood. (This is not to underrate the importance of reducing population growth. For in an already highly populated country the burden of dependency on the income-earners becomes much too heavy, and the sense of dependency among the young brings on feelings of rejection and humiliation.)

The picture of the culture of poverty that emerges from various studies is highly depressing; it is a picture of large families whose members exhibit physical and psychic abnormality, incapacity for sustained work even for a few hours, and a pronounced inferiority complex. In such families there is a tendency to deal with patterns of exploitation and coercion by directing them inward and against dependents. This creates a vicious cycle – of parents forcing children into these characteristics of deprivation and degradation, and turning them into the same kind of adults when they grow up. We must therefore give top priority to a programme of providing basic health care (with more accent on preventive health services) and an adequate supply of protein and other nutrients to the poor, specially to their children. One of the more important elements reinforcing rural poverty in poor countries is that those most needing medical attention are precisely those who are too poor to take advantage of available facilities.

Here it is essential to stress a special advantage that Third World countries have in charting a distinctive course of development in which the human cost that has accompanied economic growth in other societies can be avoided. Given their advantage in the low cost of trained manpower, it is possible to spread the basic essentials of education and health over the whole country – to all classes of people and in a short time through concentrated and devoted effort. This will lay a surer basis for all-round and continuous development than all the investments made in high technology, urbanization, mass media development, and the other appendages of 'modernity'. Health and education are the essential prerequisites of social and economic mobilization for sustained, and sustainable, development. Once such a basis is laid, nothing can prevent society from moving forward. What is more, it is a process of development that will produce far fewer disparities and dislocations than is the case when the sole emphasis is on economic growth in aggregate GNP terms without regard to the cultural framework in which it takes place.

Minima and maxima. The above analysis provides the elements of an alternative model. The objective of development, according to us, should be to achieve minimum conditions of material welfare for all the people. The *minima* have, of course, to be defined according to local conditions and norms, but they must provide for, at the least, a package of human necessity such

as food, clothing, shelter and nutritional needs, to children and mothers in particular, and of social goods such as health, education, drinking water and public transportation for all. The extent to which these minima should be translated into personal or family incomes or combined with social welfare and social-security programmes will depend on local conditions and the nature of the political systems. But it should not be difficult for any system to work out a minimum-income policy as a basic component of development planning.

A policy of minima entails a policy of *maxima*. Indeed, without the latter the former is, in practice, impossible to realize in reasonable time. Also, beyond a certain point, incomes ought not to be allowed to grow nor human wants allowed to be artificially stimulated by the aggressive salesmanship of modern industry or by the demonstration effects of the rich capitalist countries. There are two reasons for this limitation, one of which is relative and the other absolute. No one has a right to amass more and more income and more and more riches when large sections of humanity live below subsistence standards. Also, it is morally undesirable to go beyond a certain level of fulfilment of human needs. For an unlimited gratification of wants leads to individual decay and social disharmony no less than to an unnecessary destruction of natural resources as well as a fouling of the human environment, bartering away, in the process, of the health and happiness of future generations for the present pleasure and lust of a few. Hence our emphasis on 'limitation of wants' as a necessary principle of a preferred world.

Participation. Implicit in such a preferred model for social and economic justice are also a number of other issues. The norms of minima and maxima are not mere economic formulations; they are part of a certain conception of good and desirable life. Not only should an individual be entitled to a minimum standard of living; he should also be able to participate actively (though he ought not to be forced to do so) in the way things are produced and decisions are made. We are not thinking of just a minimum wage in some kind of contractual relationship, nor of alienation from the work process and the total scheme of ownership, production and distribution of the means of livelihood. Rather, we are thinking of an apparatus that men and women themselves control and find meaningful and from which they derive a sense of personal power and significance. Furthermore, to the extent that economic activity is managed and mediated by political and administrative agencies, the question of effective participation in decision-making, at the desirable level and in optimum units, becomes very pertinent. Without such participation the economic aims may indeed be difficult to achieve.

There is also the need to prevent the economic process, tellingly called the 'industrial-bureaucratic complex', of modern society from acquiring a will

of its own and destroying every other value in its inexorable march. In other words, as the values of a participatory democracy and of non-violence in man's relations to man and to environment are joined with the values of individual autonomy and social justice, it may well be that we should ask ourselves equally basic questions about the kind of institutional superstructure that we want to build. Three major aspects of this issue are: (i) the rural-urban structure of the economy, (ii) the territorial structure of the state, and (iii) the participatory structure of the polity. As we consider these aspects, it will become clear that the current model of modernization is not conducive to the goals spelt out by us, that the norm of a necessary shift from a predominantly rural to a predominantly urban structure based on large-scale industrialization may not be the best thing that human intelligence has devised, and that urban metropolitan life, far from being a 'civilizing' instrument, may turn into a structure of manipulation, exploitation and destruction of the very properties of man's natural environment that are essential to human survival.

Similarly, we may also question the norms of centralized government, large-sized states and big bureaucracies as necessary instruments of national integration and political accountability. And as we question these, we may begin to answer with greater clarity the problems raised about local autonomy, about decentralization of functions, powers, resources and talents, and about optimum size for genuine participation of the people. Perhaps there is something to be gained in the very short run from large-scale enterprises, modern communication media and centralization of planned initiative, although the real issue here is less of scale than of control. But it is also necessary not to close all options for the generations to come concerning the quality of life they would like to have. As the prospects of the future are vitally affected by what is done in the present (it is no longer possible to think in terms of just a few years or even a few decades ahead), it is a matter of considerable responsibility that these various consequences of present actions are borne in mind.

It is necessary to consider here a widespread belief that rapid development cannot be carried out in a participatory framework, that only a determined and authoritarian elite can bring it about, that this indeed is the lesson of contemporary history. Our answer to such a position is that it mistakes appearance for reality, that the issue is not one of choice between liberal democracy dominated by machine politics and state socialism in which a small bureaucratic elite seeks to perpetuate itself, but that both these systems are authoritarian as far as the majority of the people are concerned (there is far greater similarity between the two than appears at first sight), and that the real issue relates to the classic predicament of political life, namely, the relationship between those in power and those out of power, between the

government and the people. Seen in this light, it is not surprising that the demand for authoritarianism has normally come from members of the privileged classes (the businessmen, the bureaucrats, the technocrats), often reinforced by the analyses and prescriptions of foreigners. These issues are highly pertinent to the region on which this seminar is being held.

The model of a participatory system should not be conceived in terms of simple political reforms. Rather, it should be expressed in a number of sectors: the economic organization and its governance, the nature of education, location of work and enterprise, choice of technology, size of units (economic, political, demographic, communications) and the nature of work. Participation is not some process of involving everyone and reducing all to a common denominator. Such a conception often becomes a handle in the hands of political manipulators and demagogues. It rather consists in evolving institutional structures from which diverse individuals get a sense of dignity and self-respect, as beings that are able to determine their own destinies. For poverty and inequality are themselves reflections not just of prevailing relations of production but rather of structures and values that deny dignity to the human being.

Nor should our thinking on participation be conceived in terms of establishing idyllic and isolated small communities. The idea (as outlined above) of a social and spatial continuum goes against such a utopia. We are also convinced that, given the numbers of human beings we have to deal with, such a utopia is no longer feasible. Our concern, rather, is that structures at various levels and of various sizes imbibe the value of participation as integral to the concept of a just society and the values of autonomy and dignity of all human beings. It is only through such an integrated view of the various components of a development model that an alternative political perspective can emerge and policy issues discussed in a meaningful manner.

It would be folly, however, to look upon such a perspective as in any way smooth sailing on some neat course. Nothing is more difficult to realize than a change in the social framework of politics – except for the worse. Every move on such a course needs to be fought for, by organizing for it and building sustained pressures from below in the form of social and intellectual movements. And it is, of course, clear that these will need to be conceived and carried out in not one but many spheres, at not one but many levels. But we are firmly convinced that it is only on the basis of a clear acceptance of a decentralized and highly participatory democratic structure that both social justice and environmental equity can be realized.

These, then, are the issues that arise when specific problems of economic strategy, political structure, educational policy and the reconstruction of the human space and the natural environment are considered from the integrated perspective provided by a set of values and the criteria that follow from it.

Involved in such an approach is a conception of life-style in which reason, compassion and a regard for the unity and integrity of life as a whole are joined in the cultivation of a truly civilized life. And as we do this, the distinctions between economic and political issues disappear, as do the distinctions between human and natural, and we begin to see the real linkages that underlie any effort to produce a better world. Our conception of alternative strategies entails such a comprehensive perspective on development.